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Canada. Salt Fish Board  
Economic Series, No. 2

COMPETITION OF CANADIAN  
AND NEWFOUNDLAND FISHERIES

Stewart Bates.





Canada Salt Fish Board

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Dominion of Canada

Department of Fisheries

(Minister of Fisheries - J. E. Michaud )

THE COMPETITION OF THE CANADIAN AND  
NEWFOUNDLAND FISHERIES

by

Stewart Bates

Economic Series, No. 2.

Salt Fish Board. Halifax, N. S.

April, 1941.



### Foreword

This memorandum is the second of a series of short economic studies being made available by the Salt Fish Board. This series, based on investigations made for the Board, is **designed** and specially prepared for public distribution. If there is sufficient general interest in these short summary statements, additional ones will be prepared from time to time and sent to those expressing a desire to have them.

The study, the facts presented, the opinions or implications contained therein, are solely the writer's responsibility, and his connexion with the Salt Fish Board does not necessarily imply its endorsement of them.

*luteola* (L.) Benth.

The Competition  
of the Canadian & Newfoundland Fisheries.

The competition of these almost adjacent fisheries exists mainly in the salt fish trade. The Canadian dried salt trade has, for some ten years, felt increasingly the penetration of Newfoundland into West Indian markets which had been hitherto regarded as a special preserve of the Canadian exporters. In addition to this contraction of Canadian outlets for cod, the low prices of the Newfoundland product were sometimes such as to compete, not only with the lower grades of Canadian cod, but also with other fish exports from Canada, - scale fish and mackerel in particular. Consequently few regions of the Canadian Atlantic coast remained unaware that they had been giving ground to Newfoundland. The rate of decline in Canadian exports was too great to allow any doubt, especially after the recovery from the world depression in 1934 and 1935 did nothing to raise Canadian fish exports. The downward movement of Canadian dried cod was as steep and as steadily declining as the downtrend in herring - a commodity which in its old-established salted form was going out of taste. But the loss in codfish exports was little attributable to changes in consumers' tastes. The markets were still there, but Porto Rico, Jamaica, Trinidad, and even Cuba and the United States

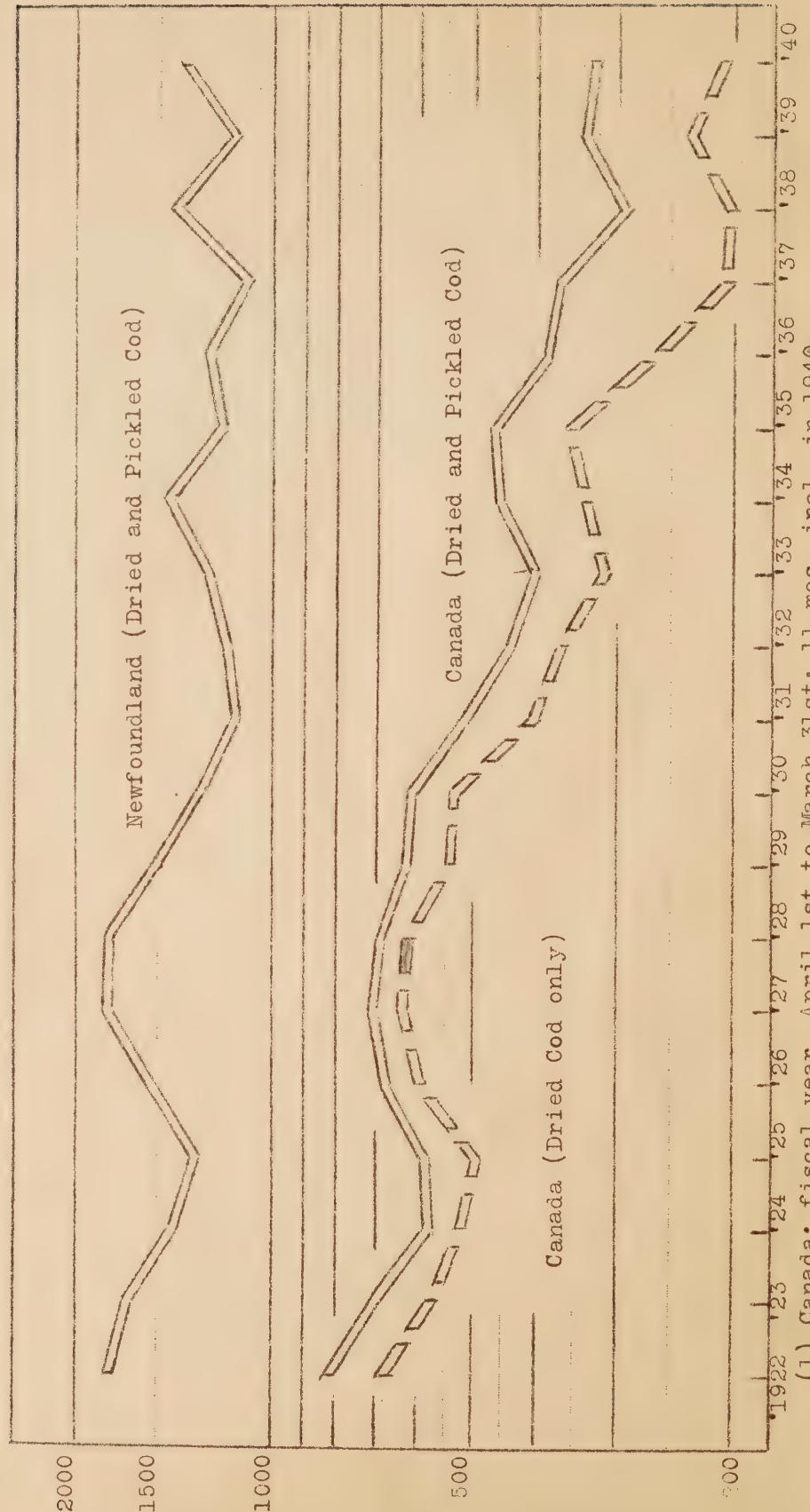




COMPARISON OF EXPORTS OF SALT CODEFISH FROM

Canada and Newfoundland, 1922 - 1940(1)

(1000 cwt.)



(1) Canada: fiscal year, April 1st to March 31st; 11 mos. incl. in 1940.  
Newfoundland: calendar year.

Source: Dom. Bureau of Statistics, Trade of Canada, 1923-40;  
Newfoundland Fisheries Board.

were buying less Canadian and more Newfoundland salt fish. No new efforts on the manufacture or export of pickled fish (cod or mackerel) could provide an income to compensate the shore fishermen for the decline in the price and the outlets for salt codfish.

The first chart shows the relative decline in Canadian and Newfoundland codfish exports in the period between the two wars. In round terms, Canadian exports fell by two-thirds, and Newfoundland's by one quarter. This is sufficient to indicate that, although Canadian fishery interests are inclined to regard Newfoundland as the immediate cause of many of their difficulties, Newfoundland was not free from some of the forces making for decline. In fact this chart may understate Newfoundland's difficulties. It merely shows that the quantity exported fell less than in Canada. But the relative maintenance of Newfoundland's export position was not due to any greater efficiency in catching or selling, or to any greater profitableness, for that fishery too was encountering distress. The chart shows rather that Newfoundland had even fewer alternative occupations: her fishery was larger and the mainstay of a great section of the people: they had to fish even when returns became low. Furthermore within the fishery itself, they had fewer alternatives: their fishery was even less adaptable than the Canadian to fresh fish, lobsters, and



boneless fish manufacture. They were compelled to export salt codfish almost regardless of the returns. In these conditions, the fact that their exports fell by as much as one quarter indicates that the returns were becoming so low as to make it impossible for some men to follow the sea at all: the depreciation of gear and boats, of houses, clothing and other equipment compelled a reduction of output, and a transference of large groups of families to the relief rolls. The attempt to maintain output forced lower returns, and in time the failure of these returns to cover the costs of fishing compelled more and more men to give up the only occupation they knew.

Accordingly, it is clear that some fishery problems were common to both Canada and Newfoundland. To attempt to understand the local competition between the two fisheries in isolation from their mutual difficulties, is to fail to understand the nature of the questions confronting the shore fishermen of the North Atlantic.

It is customary, in discussions of the salt fish trade, to point out that for the world as a whole, the general trend for twenty years, has been towards an overexpansion of world supplies, that the depression after 1929 increased the difficulties by reducing the buying power of certain markets (because the main markets were in



agricultural countries which were almost all slow to recover), and that the subsequent growth of nationalism and protectionism in these countries so contributed to the other operating causes that by 1939 it was generally realised that the saturation point in salt fish production was being reached for the world as a whole. The outbreak of war in 1939 altered the picture, but to 1939, the world experience in this trade is generally described as above.

While the facts of this statement are substantiated, and while they are all of some considerable weight, an interpretation of the difficulties of North Atlantic fishermen, whether on the Canadian or Newfoundland coasts, requires additional material.

Throughout the past 20 years, there were two operative causes, important for the fish trade of the world, but particularly so for Newfoundland and Canada. One was the maladjustment created by the previous war (1914-18), and the second was the lack of adaptation in methods within the fishery itself. These factors tend to be understated by North Atlantic fishery interests.

As to the maladjustment of the previous war, North Atlantic fishermen suffered from causes common to some other producers of the American continent (e. g. Canadian wheat, and Caribbean sugar). During the last war, one of the great producers, Norway, had for war reasons only a small exportable surplus of fish. From 1,200,000



cwts. (1) in 1913, her exports fell to 300,000 in 1919. This gap was filled by Newfoundland principally (just as the Canadian west increased its wheat acreage to compensate for the decline in the European acreage at that time). Newfoundland exports rose from 1,500,000 cwts. in 1912 and 1913, to over 2,000,000 in 1918-1920. The Canadian and U. S. A. dried fish trades filled up part of the gap. At the same time however, the main markets were non-belligerents, and enjoyed great prosperity, so that even with these expansions of production, supplies were inadequate and prices were at quite unusually high levels in relation to costs.

After the war, European readjustment began. The producing countries came back, although by 1929, Norway had still not reached her pre-war production. But Iceland had moved into **the** position of a world force in this trade, and from 1917 onwards her exports expanded. So that from an export of 500,000 cwts. in 1913, she had by 1929 exceeded Norway, and exported over 1,000,000 cwts. By then too, the United Kingdom had recovered her pre-war exports (500,000 in 1913, 100,000 in 1918, 500,000 in 1929). And France had raised her pre-war export of 100,000 to 400,000 cwts. in 1929.

This readjustment was continuous after the last war, becoming more serious from year to year, as

(1) Cwt. = 100 lbs.



Europe returned to former export levels. Newfoundland had to give some way from her war peaks, but even in 1927 and 1928 she was exporting 1,750,000 cwts. as against 1,500,000 in 1912 and 1913. At the same time, some of the markets (particularly in the Caribbean and Brazil) were suffering from similar causes: they too were finding it necessary to readjust after the exceptional war booms when European supplies were short. Hence the fairly consistent pressure on prices right through to 1929. By 1929, readjustment to the war boom had not been made in the dried fish trade - no more than in the world wheat, sugar, rubber or some other primary commodities. But the position was more complicated in the fish trade than in these others, for the fish trade was confronted with markets that were suffering from the same defects as the producers. In wheat, sugar and some other commodities, the markets were mainly in industrialised countries, in which the purchasing power was relatively more stable. But the world dried fish producers were selling to agricultural regions which in themselves had no more stability than the fishermen. A double depressant faced the industry, and the history after 1929 tended to reinforce rather than remove the fundamental maladjustments. The producers scrambled for the markets, tried to keep up returns by increasing production, sought government supports where that was politically possible,



and found nevertheless that the markets to which they sold, in the Mediterrean and the Caribbean and South America were all in similar difficulties, seeking bi-lateral treaties, conserving exchange, and becoming more nationalistic, both economically and politically. But conditions did not make for much bi-lateral action, because the fish producing countries were, none of them, great consumers of the commodities produced by the agricultural countries that were their markets. Among the fish producers, only Canada and Newfoundland were members of a political unit of great strength, but while such imperial preferences could temporarily assist some primary producers, it was of little help to fishermen because their markets were in the countries that tended to be hindered rather than helped by imperial preferences. (This was less true of Newfoundland after her loss of representative government: she then came within the trade orbit of the United Kingdom, as for example was revealed in 1938 with her large exports to Italy under the Anglo-Italian trade agreement. Whether Newfoundland's trade position in fact received a net gain from this association does not concern us here).

Up to 1939 the situation of the world salt fish industry became progressively worse and appeared likely to deteriorate further as three of the large markets - Italy, Portugal and Spain - were preparing,



under self-sufficiency motives, to build up salt fishing fleets. The situation was sufficiently serious to convince the main producing countries that their community of interest merited discussion. The subsequent International Fisheries Conference (April 1939) found difficulty in discussing the main question, namely the possibility of restricting production. However, the fact that a conference was held was not insignificant.

Accordingly, at the end of this period, the industry was more maladjusted than at the beginning: in all countries, there were bonus schemes: in all, except Canada, the control over exports was in the hands of a single board: the markets were not expanding: the annual carry-over was increasing.

The second great difficulty during this period between the two wars, was the lack of adaptation within the fishery itself. As a commodity, dried salt fish was not consumed in areas of higher living standards: as a foodstuff it was in stiff competition **with** certain substitutes. With these it had to compete, both in price and in quality, but particularly in price since the bulk of the consumers were relatively poor. To compete, the salt fish trade had to keep pace with the changing character of the foodstuffs industry - a problem less difficult for the salt fish trade than for the fresh fish, but nevertheless still present. And this changing



organisation of the food industries was implemented by governments in those countries that were promoting greater self-sufficiency. Self-sufficiency in food was among the most common aims of countries in this category, and this they encouraged by various devices, all calculated in short to raise the price of imported foods - including fish - relatively to home-produced foods. Since the markets were essentially price markets, especially after 1929, the salt fish industry was encountering new industrial competition.

In this competition, it was implicit that some adaptation of the fish trade was necessary: those fisheries that were able to make such changes would stand up better to the two-fold problem - a tendency to continuous expansion of fish supplies, and oppositively a tendency to contraction of certain markets. Now Canada and Newfoundland were similar in that adaptation to the changed conditions was hardly apparent. The methods of fishing along the shores were traditional, so were the methods of preparing the product, and the methods of marketing it. That they were able to compete at all was attributable largely to the excellence of the natural fisheries they both enjoyed. But this alone was not sufficient to compensate for lack of adaptation in methods of catching, curing and selling. As an economic unit, the shore fisherman was poorly endowed with the



qualities necessary to produce affluence in an international economy that was becoming trustified. It was becoming an economy of blocs, not individuals, and that was increasingly characteristic of trade between countries, and also within countries. His position was weaker not merely because of growing international trade barriers, and bi-lateral trading, in which he could offer no quid pro quo: it was weaker also because of trusts, cartels, and growing labour unions within countries. These organisations within protected areas were frequently able to maintain their standards, even if the consequences involved high costs to consumers. Hence the North Atlantic fishermen in both Canada and Newfoundland, had to buy food, clothing, and fishing equipment at relatively high costs, since these goods were got largely from the high cost, high standard of living communities of the North American Continent. At the same time, the fishermen tried to sell to poor consumers in relatively poor agricultural countries, countries with which neither Canada nor Newfoundland had many trade agreements that expanded the fish outlets. To remain a small economic unit in these conditions, and to secure adequate returns was hardly possible, unless fishing methods were so efficient as to offset high costs, and poor consumers. But fishing methods were traditional, involving only small capitals per fisherman.



Their equipment tended to be less effective than say in Norway, both the sea equipment and the shore equipment for curing, using by-products (cod-liver oil), etc. Yet the costs of their equipment, and the cost of food and shelter tended to be higher than in Norway since these materials were so largely bought from the protected North American markets. Hence the shore fishermen in both Canada and Newfoundland were at a loss as compared to the efficient, lower cost producers in some other countries. Consequently both these countries gradually lost markets in Europe in the period of readjustment after the last war. In Canada, the loss of European and then of Caribbean markets was steady: in Newfoundland, uneconomic prices were charged but even with that European markets were lost, and she had to undersell Canada in the West Indies. The price paid for the organisation in Canada was loss of markets: Newfoundland held some markets at Canada's expense, but her real cost was widespread destitution, through lack of alternative occupations to fishing.

The instability of Newfoundland's fish trade with European, and the consequent penetration of West Indian markets is revealed when we recall that even as late as 1929, Newfoundland sold almost three quarters of a million quintals of salt cod in Europe, whereas in 1937 she sold only 320,000 quintals: in 1940 she sold



almost 500,000 quintals. In short, Europe used to take about 60% of her cod: now it takes about 40%, and the position was unstable even at this lower level, because the sales have sometimes been made at sacrifice prices, and because the attachment to any one market is slender and precarious.

NEWFOUNDLAND EXPORTS TO EUROPE<sup>(1)</sup>

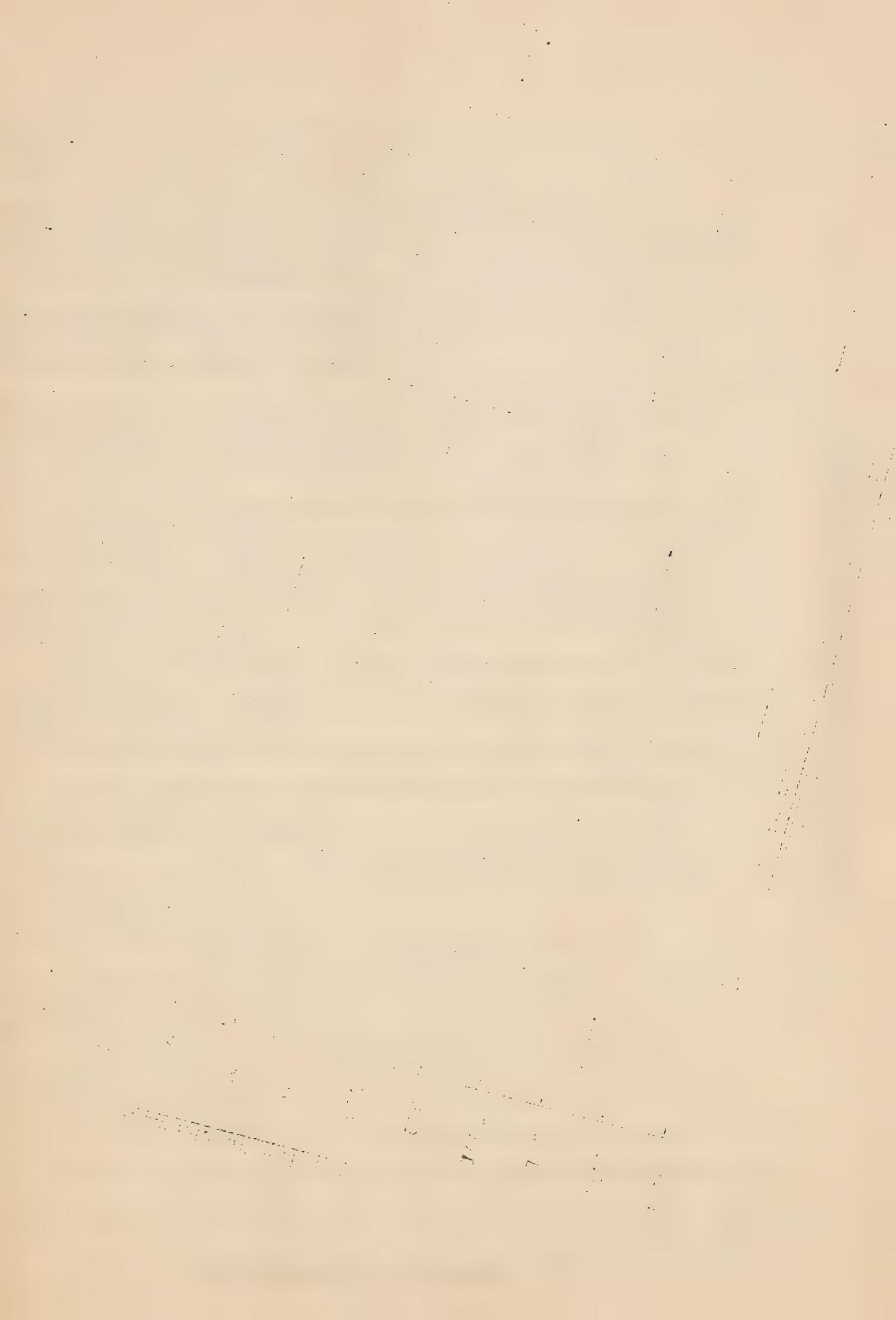
PERCENTAGE TAKEN BY DIFFERENT MARKETS

	1929	1937	1938	1939	1940
United Kingdom	3%	7%	3%	9%	8%
Greece	6	30	23	17	2
Italy	21	21	36	43	18
Portugal	32	30	36	31	45
Spain	38	12	2	--	27
	—	—	—	—	—
	100	100	100	100	100

A glance at this table shows that only one European market showed any stability as a buyer of Newfoundland fish over this period, namely Portugal. However the stability was more apparent than real: for Portugal was also regarded as a good outlet for Norway and Iceland, and Portugal was not slow to take advantage of her strong buying position. She strengthened it further by centralising her purchases in one buying board

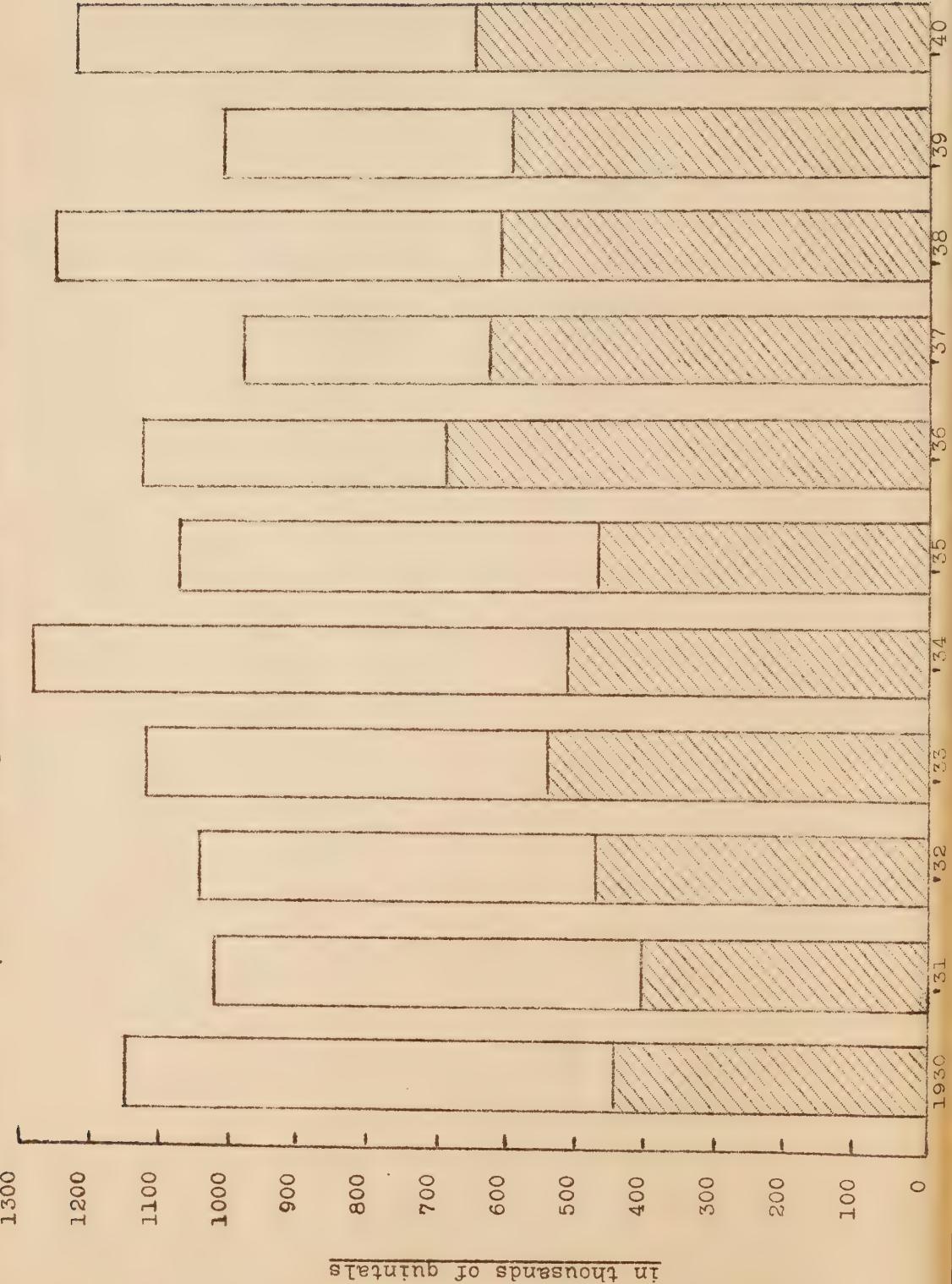
(1) See Tables Numbered 7 - 12 in Statistical Appendix.





NEWFOUNDLAND EXPORTS OF SALTED CODEFISH

(Shaded area represents volume of exports to Western Hemisphere)



in thousands of quintals

which proceeded to negotiate skilfully with the various sellers. Consequently stable sales to Portugal were secured only at low prices. By 1937, Spain, the great market, suffered from civil war. But at that time Newfoundland managed to make larger sales to Greece, because the United Kingdom and Newfoundland were free from Grecian exchange clearing arrangements whereas Norway and Iceland were restricted. At end of 1938 Greece removed restrictions on Norway and Iceland, and Newfoundland could no longer compete there with these other cures. But this loss was temporarily balanced by a new outlet in Italy, an outlet secured to Newfoundland by the Anglo-Italian agreement. That outlet too was unstable, and was off somewhat by 1939: which proved a relatively poor year for Newfoundland. By 1940 Spain had returned as a purchaser, and the Iberian peninsula was, for that year, Newfoundland's main European market.

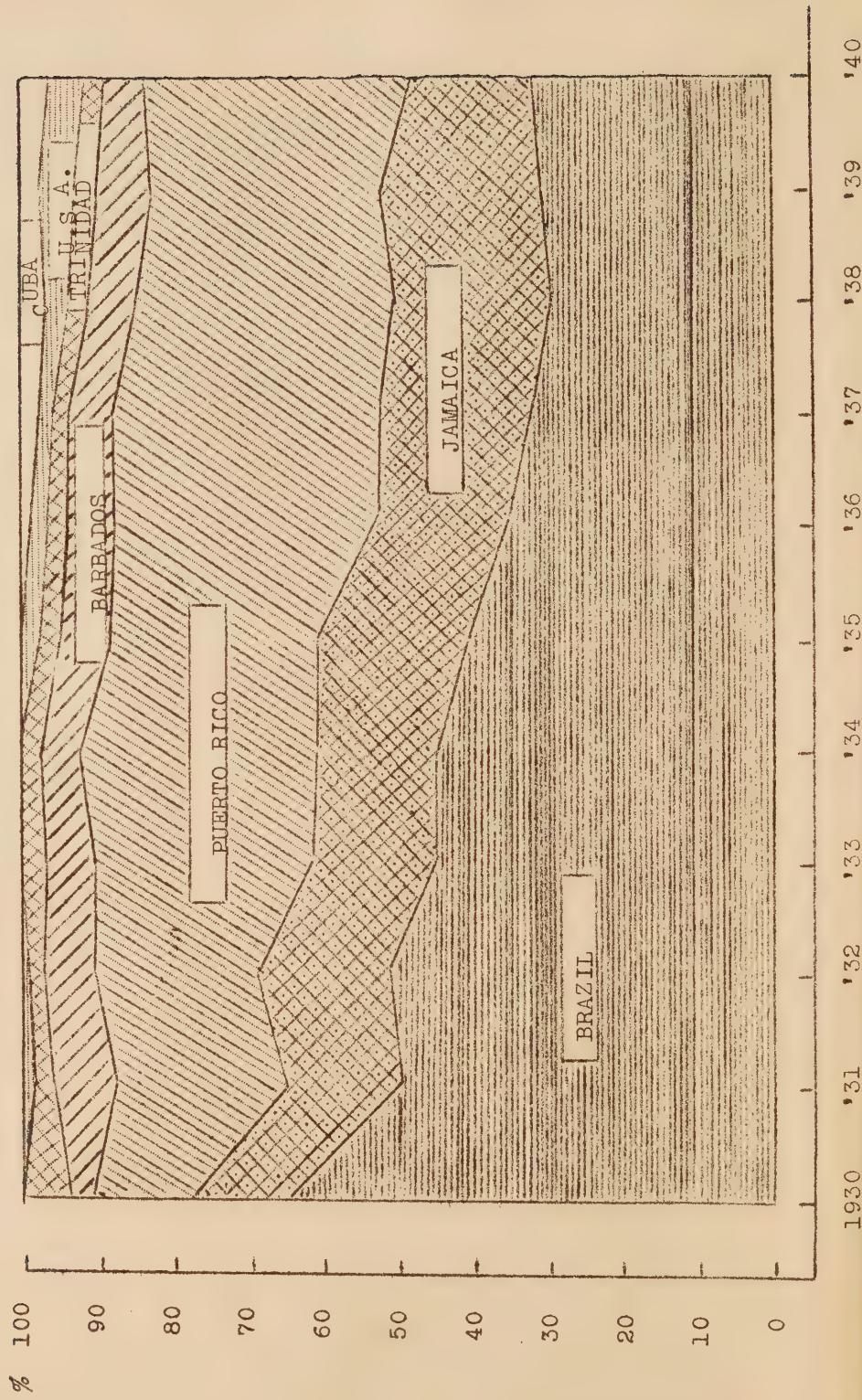
However, it is sufficient to point out how unstable this trading has become for Newfoundland. And to remember that she has been compelled to sell increasingly on the American continent, north and south, and in the Caribbean. The following chart shows Newfoundland's total codfish exports, the shaded parts representing the portion of exports going to the New World (North and South America, and islands of the West Indies). The total has





NEWFOUNDLAND EXPORTS OF CODFISH TO WESTERN HEMISPHERE

Percentage Distribution by Countries.



increased despite the great reduction in Brazilian purchases consequent on the economic difficulties being experienced by that country. However the Newfoundland sales to other markets of this region, particularly Porto Rico, were sufficient to expand Newfoundland's contacts with the Western hemisphere. Another chart is added showing the percentage of Newfoundland's New World exports, according to countries. Her growing concern with this continent is unmistakable, and the transference of exports to this continent is gradually coming into line with her import position, three-quarters of her purchases abroad being from North America. To live in a world of bi-lateral trading, and exchange restrictions - even with access to the "sterling" area - implies the necessity of closer balance of exports and imports in terms of areas, both spatial and monetary. The "pull" of this continent has always been strong when Newfoundland purchased from abroad: she now has a similar "pull" on her exports.

It is through her increasing interest in American continental markets that Newfoundland competition with Canadian fish exports has become acute. Canada, it is to be remembered, was less concerned with European markets in the past **twenty** years. At most they represented 14% of Canadian export values in the years before the depression, Italy being the main market, with some



Gaspé and some Lunenburg fish going to Oporto. However, Canada found Europe too unprofitable after the depression, and particularly after the sanctions against Italy in 1935 were never modified by any agreement like the Anglo-Italian. Hence after this date, Canadian fish exports were confined to this continent.

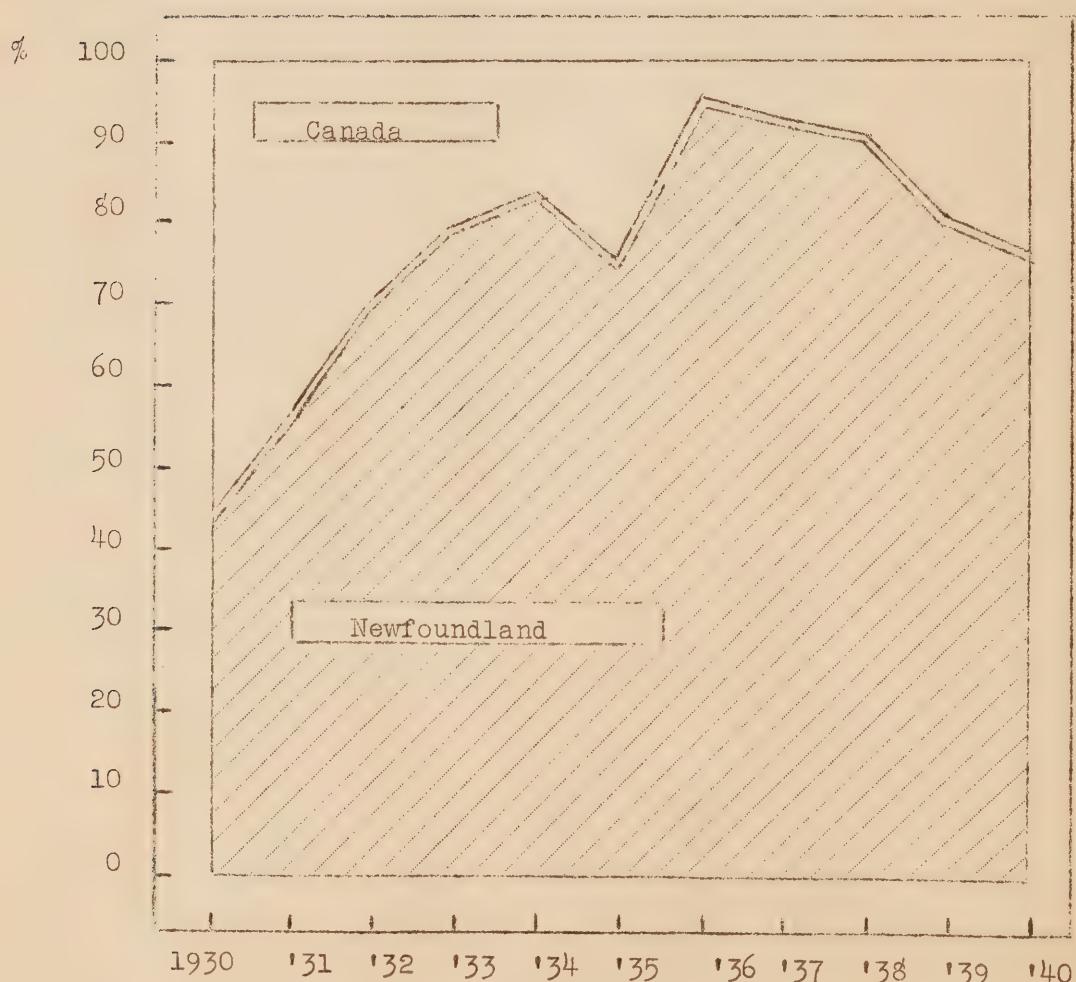
To clarify the extent of Canadian - Newfoundland competition in the American continent, the full extent of Canada's interest in this region has to be made clear. In 1924 for example, Canada sold about 80% of all her salt fish to the U. S. A. and the islands of the Caribbean: 14% went to Europe as mentioned above, and the remaining 6% to South America (Brazil and British Guiana). It is unnecessary to consider Newfoundland's competition in all these markets, but the most important may be briefly reviewed, i.e., Porto Rico, Jamaica, Trinidad, Barbados and Cuba. Charts have been drawn for each of these countries, showing the competitive position of Canada and Newfoundland respectively in dried salt codfish. To some extent the charts underestimate Canada's loss, for in some markets, the Newfoundland gains were at the expense, not merely of Canadian cod, but also Canadian scalefish, and even pickled fish. The increased competition encountered by the scalefish branch of the Canadian industry cannot be too strongly emphasised, when measuring the effects of Newfoundland competition.





PORTO RICO

Relative Shares of Canada & Newfoundland



Source: as in tables.

Because the Canadian fishery, unlike many others, has a large proportion of scalefish in its total landings. To Canada this branch has therefore a degree of importance (to some districts in particular) not present elsewhere. Consequently, the Newfoundland competition, especially that from low-priced codfish, had severe effects on the markets, and the income of quite large sectors of the Canadian Atlantic fishery. However, since all these changes are impossible to incorporate on a simple diagram, attention is confined to competition in dried salted codfish. The charts show the relative share of each producer in the total quantity taken by that market from Canada and Newfoundland together (i.e., charts do not show Canada's and Newfoundland's share in the total market of each country, but only their relative share of their combined total).

The first chart<sup>(2)</sup> shows the changing share in Porto Rico, where Newfoundland, with only 40% before 1930, has established a new level averaging over 80%. This market like others in this region, has been a "price" market for some years. Furthermore, the peculiar tariff structure, which from 1930 onwards put a 75 cents per 100 lbs. duty on 'wet' fish (over 43% moisture) and a duty of \$1.25 per 100 lbs. on dried fish (under 43% moisture) - designed to cheapen raw material supplies for Gloucester - assisted Newfoundland imports to Porto Rico by giving

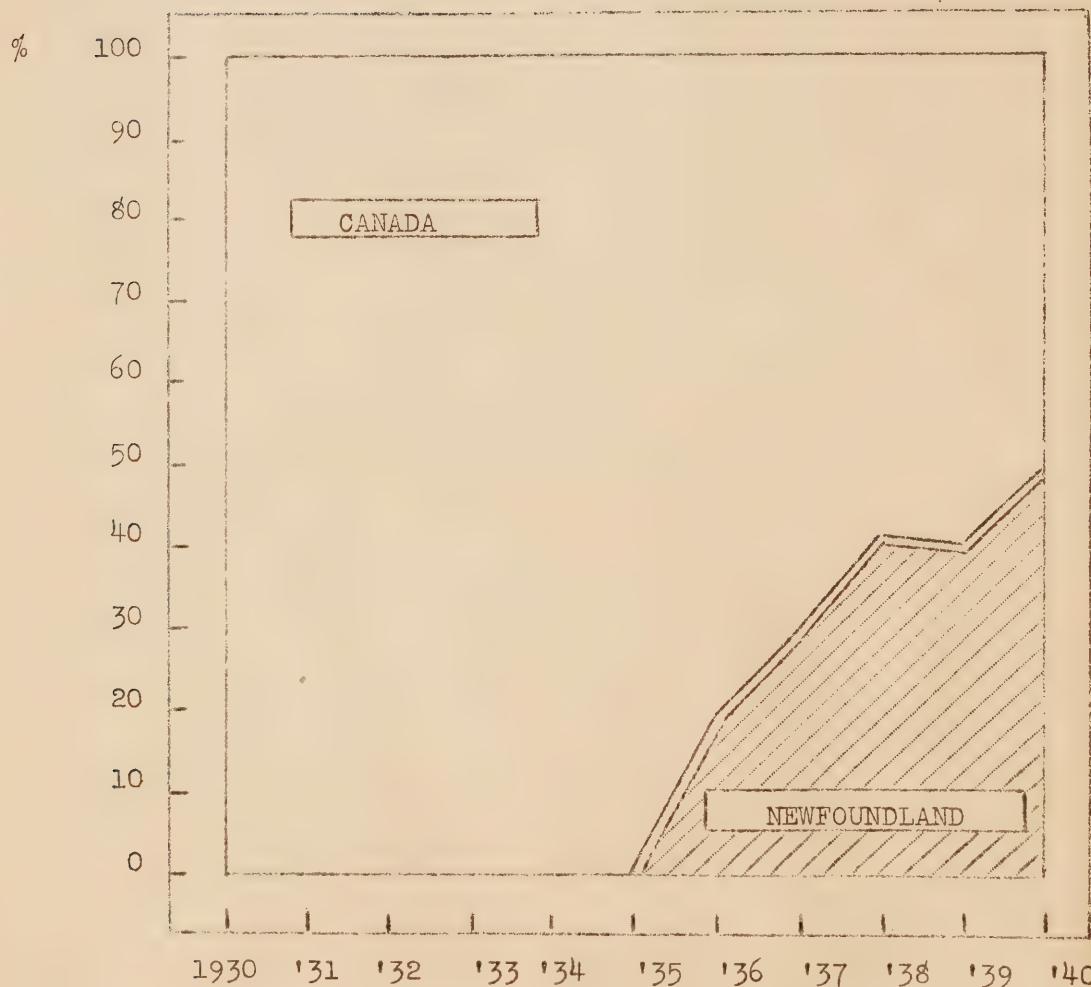
(2) See Tables Numbered 1 - 6 in Statistical Appendix.





CUBA

Relative Shares of Canada & Newfoundland



Source: as in tables.

their moist cures a saving of 50 cents per 100 lbs. as against Canadian dried cures. These rates were each cut in half by the Canadian and British American Trade Agreements of November 1938, so that the "spread" has been reduced, although it still remains. In a price market, with this tariff differential, the expansion of Newfoundland was inevitable, and largely at the expense of Lunenburg.

The second chart shows the position in Cuba. There Canada competed traditionally with Norway, Canada holding to the Santiago de Cuba market. Here too, Newfoundland competition has started recently, and in a few years jumped to a 50% share of the combined total. Here the market has become increasingly a price market since Cuban policy, moving towards greater self-sufficiency, laid onerous duties on fish (April 1936), and raised the fish import prices relatively to home-produced foods. In consequence fish purchasers had to seek lower-priced fish, and this was an occasion for Newfoundland competition, and competition which in turn was reinforced by Newfoundland's policy of improving qualities.

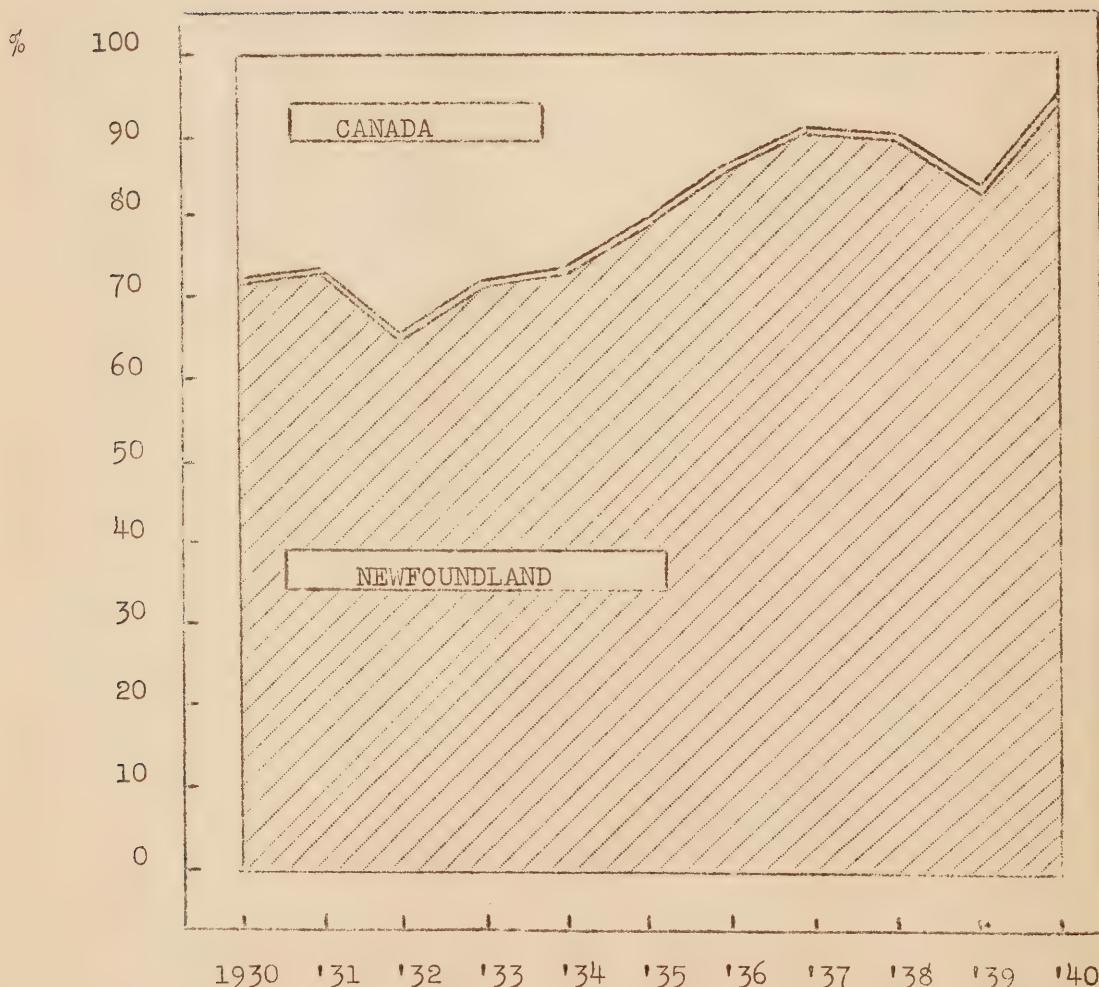
The three following charts of Jamaica, Barbados and Trinidad each reflect similar tendencies, Jamaica and Barbados showing only negligible imports from Canada, and Trinidad reflecting a growth of Newfoundland buying from 10% to 30% in this ten year period.





JAMAICA

Relative Shares of Canada & Newfoundland

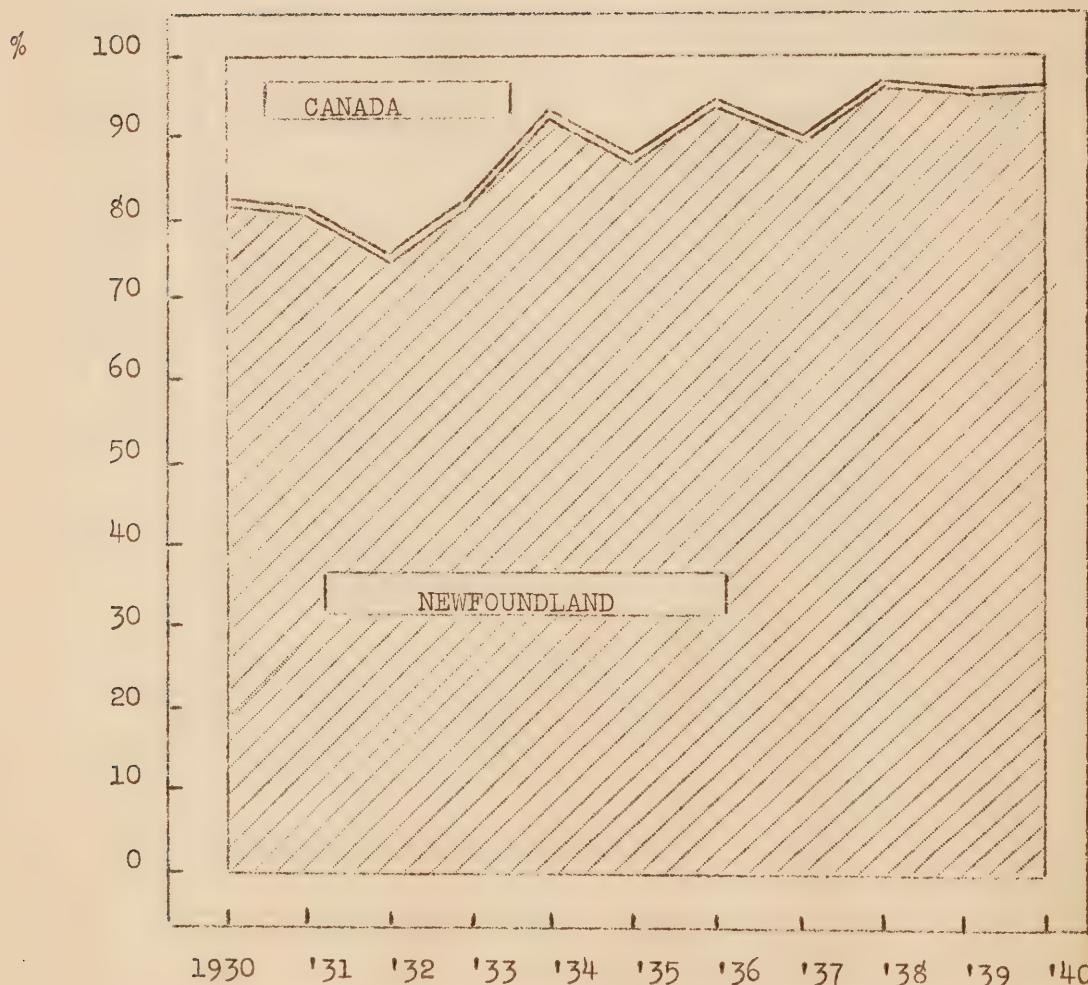


Source: as in tables.



BARBADOS

Relative Shares of Canada & Newfoundland

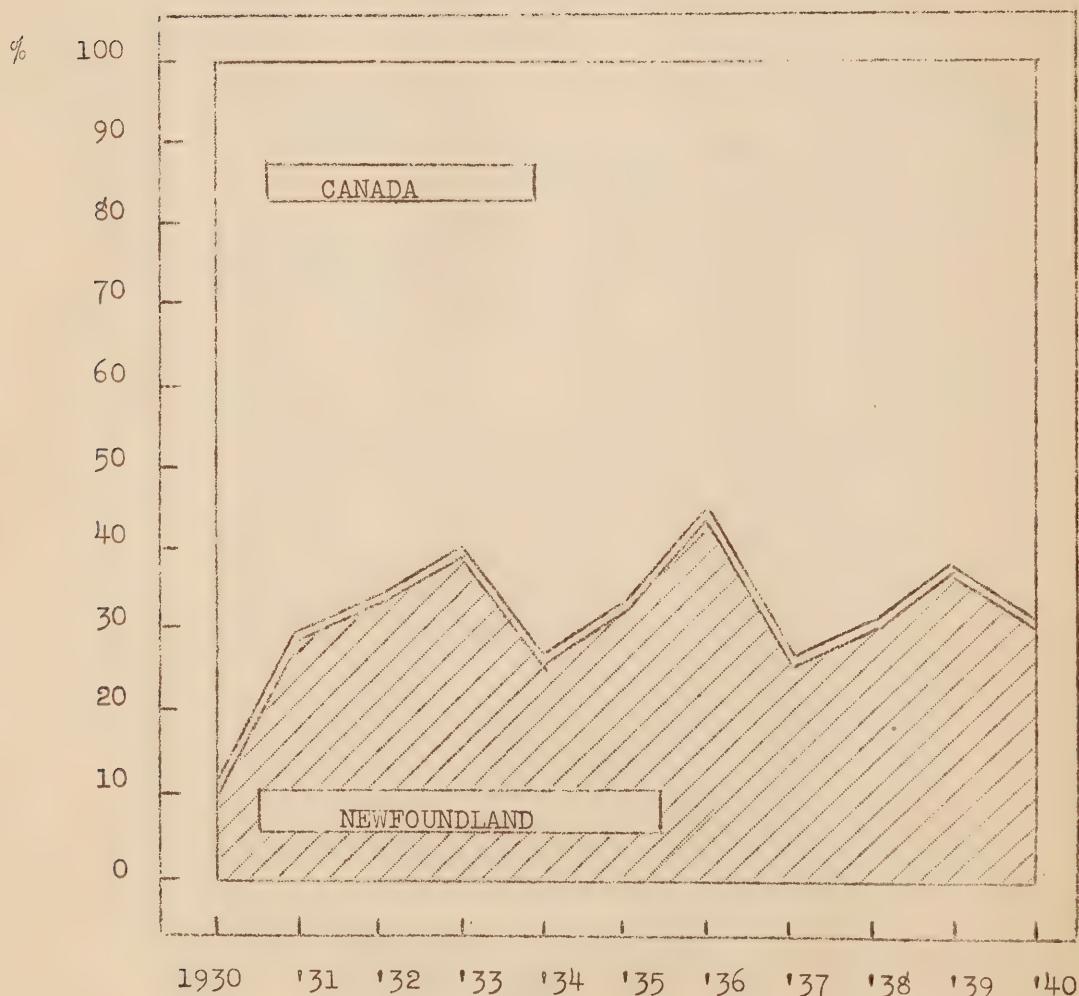


Source: as in tables.



TRINIDAD

Relative Shares of Canada & Newfoundland



Source: as in tables.

It is through these conditions that Canadian fishery interests have increasingly regarded Newfoundland as the main cause of the progressive decline in Canadian exports and of the steady down pressure on fish prices. Since the beginning of this war, the situation has eased, so far as Canada is concerned, and so long as the Iberian Peninsula is non-belligerent, then Newfoundland can profit from the removal of Norwegian competition in that market. But the relatively happy experiences of the fishing interests in the 1940-41 season does not affect the main issue, or remove the underlying difficulties.

The Canadian fisherman is fully aware of the difficulties of the Newfoundland **fisherman**: he is fully aware because their difficulties are identical. And in Canada, the shore fisherman is as near the margin of living, as is the Newfoundland fisherman. Hence, he has no surplus, either in terms of markets or of prices, that he can share with others: Newfoundland competition merely puts him below the margin. It is true that the Canadian economy as a whole is more diversified than that of Newfoundland and that theoretically there are alternative occupations available to Canadian shore fishermen. But in fact, these occupations were not available between 1930 and 1939. Apart from that, the Canadian shore fisherman typically desires to follow the



sea, and fails to appreciate why the greater diversifications of the Canadian economy should be any reason for giving up his vocation in the face of Newfoundland competition. Furthermore, it is frequently pointed out that the Canadian fishery, as a fishery, is more diversified than that of Newfoundland, and that the Canadian shore fisherman has opportunities for fresh fishing, lobster fishing, etc. This is true only for certain localised regions and at best, only to a limited extent. The shore fisherman on the Canadian coast is, like those in Newfoundland, adapted more to salt fish production, if only for the reason that he lacks the capital to indulge in other types of fishing. The development of a fresh-fishery requires a capitalisation (for catching, freezing, and processing) that is analogous to that used in other perishable food industries, and consequently the fresh fishing opportunities of the Canadian shore fisherman (apart from few localities) are almost as remote as those in Newfoundland. Any attempt to encourage alternative products (like more extensive fresh fishing) would, with his existent catching equipment, only result in low-grade commodities. Hence the Canadian shore fisherman is still vitally interested in the salt markets of the Caribbean. And until alternative fishing methods are available to him, he cannot afford to envisage any loss of markets to Newfoundland. An



understanding with Newfoundland designed to maximise their mutual returns is a policy to which he might subscribe: but an understanding designed to stabilise the market shares of say 1939, is quite a different matter, unless at the same time internal Canadian economic policy can provide a living from other pursuits, preferably fishing pursuits.



STATISTICAL APPENDIX



Table No. 1.

EXPORTS OF DRIED CODFISH  
to PUERTO RICO  
from CANADA & NEWFOUNDLAND, 1930-1940  
(Calendar years)

	Total cwt.	Canada cwt.	% of total	Nf'land cwt.	% of total
1930	150661	85221	57	65440	43
1931	192058	85189	44	106869	56
1932	175130	54110	31	121020	69
1933	223994	47668	21	176326	79
1934	220786	36786	17	184000	83
1935	198628	52434	26	146194	74
1936	290109	15902	5	274207	95
1937	276393	22798	8	253595	92
1938	263703	27678	10	236025	90
1939	244105	48362	20	195743	80
1940	284095	67590	24	216505	76

Source: Quarterly Report of the Trade of Canada,  
1930 - 1940; Newfoundland Fisheries Board.

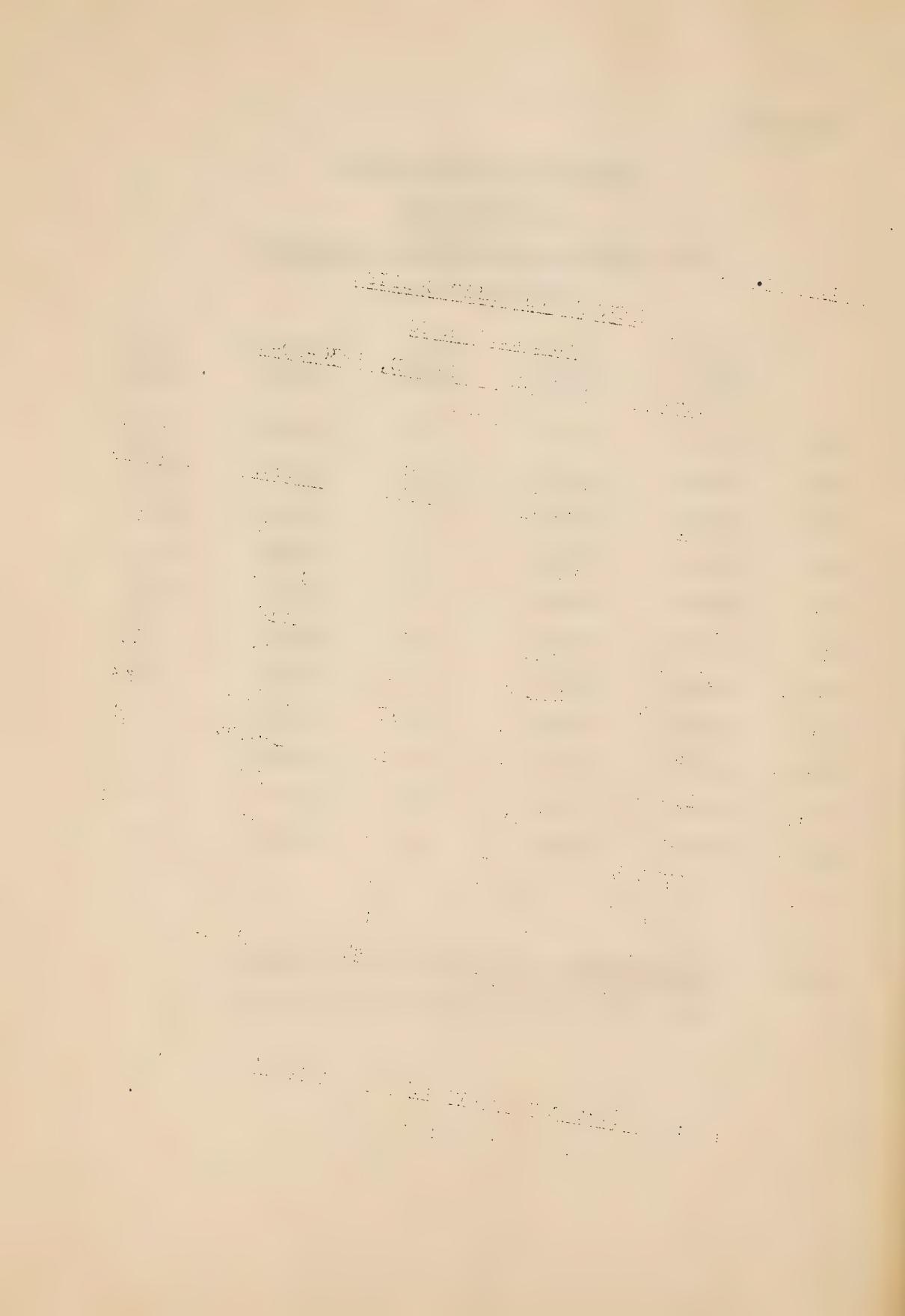


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## THEORY OF THE

## MAGNETIC FIELD

of the magnetic field in the interior of the magnet.

$$\frac{d\psi}{dr} = \frac{1}{r^2} \left( \frac{d\psi}{dr} \right)_{r=0}$$

and the boundary condition at the outer boundary of the magnet is

$$\frac{d\psi}{dr} = \frac{1}{r^2} \left( \frac{d\psi}{dr} \right)_{r=R}$$

where  $R$  is the outer radius of the magnet.

The boundary condition at the inner boundary of the magnet is

$$\frac{d\psi}{dr} = \frac{1}{r^2} \left( \frac{d\psi}{dr} \right)_{r=r_0}$$

where  $r_0$  is the inner radius of the magnet.

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where  $R$  is the outer radius of the magnet.

Table No. 2.

EXPORTS OF DRIED CODFISH

to JAMAICA

from CANADA & NEWFOUNDLAND, 1930-1940

(Calendar years)

	Total cwt.	Canada cwt.	% of total	Nf'land cwt.	% of total
1930	108107	30223	28	77884	72
1931	100796	27140	27	73656	73
1932	138477	48740	35	90007	65
1933	136482	38408	28	98074	72
1934	133769	36652	27	97117	73
1935	137835	29585	21	108250	79
1936	156981	22213	14	134768	86
1937	153333	13938	9	139395	91
1938	163065	16699	10	146366	90
1939	164025	27451	17	136574	83
1940	107830	6463	6	101367	94

Source: Quarterly Report of the Trade of Canada,  
1930 - 1940; Newfoundland Fisheries Board.



Table No. 3.

EXPORTS OF DRIED CODFISH

to BARBADOS

from CANADA & NEWFOUNDLAND, 1930-1940

(Calendar years)

	Total cwt.	Canada cwt.	% of total	Nf'land cwt.	% of total
1930	43046	7646	18	35400	82
1931	48307	9237	19	39070	81
1932	43675	10880	25	32795	75
1933	47512	8612	18	38900	82
1934	33337	2452	7	30885	93
1935	39854	5162	13	34692	87
1936	47519	2730	6	44789	94
1937	44838	4342	10	40496	90
1938	47444	1621	3	45823	97
1939	46137	1927	4	44210	96
1940	36697	1464	4	35233	96

Source: Quarterly Report of the Trade of Canada,  
1930 - 1940; Newfoundland Fisheries Board.



Table No. 4.

EXPORTS OF DRIED CODEFISH  
to CUBA  
from CANADA & NEWFOUNDLAND, 1939-1940  
(Calendar years)

	Total cwt.	Canada cwt.	% of total	Nf'land cwt.	% of total
1930	68344	68344	100		
1931	38246	38246	100		
1932	19641	19641	100		
1933	20729	20729	100		
1934	29501	29501	100		
1935	41899	41899	100		
1936	57164	46441	81	10723	19
1937	57324	40430	71	16894	29
1938	63628	37472	59	26156	41
1939	55667	33213	60	22454	40
1940	56516	28854	51	27662	49

Source: Quarterly Report of the Trade of Canada,  
1930 - 1940; Newfoundland Fisheries Board.



Table No. 5.

EXPORTS OF DRIED CODFISH  
to TRINIDAD  
from CANADA & NEWFOUNDLAND, 1930-1940  
(Calendar years)

	Total cwt.	Canada cwt.	% of total	Nf'land cwt.	% of total
1930	<b>37793</b>	33421	88	4372	12
1931	39419	27547	70	11872	30
1932	32506	21366	66	11140	34
1933	45187	27021	60	18166	40
1934	45035	32818	73	12217	27
1935	48119	32172	67	15947	33
1936	52197	28956	55	23241	45
1937	52577	38338	73	14239	27
1938	57337	39313	69	18024	31
1939	59727	36963	62	22764	38
1940	49494	33734	68	15760	32

Source: Quarterly Report of the Trade of Canada,  
1930 - 1940; Newfoundland Fisheries Board.



Table 6.

EXPORTS OF DRIED & PICKLED CODFISH  
to the UNITED STATES  
from CANADA & NEWFOUNDLAND, 1930-1940  
(Calendar years)

	Total cwt.	Canada cwt.	% of total	Nf'land cwt.	% of total
1930	199077	197870	99	1207	1
1931	162098	157729	97	4369	3
1932	138538	136364	98	2174	2
1933	188991	188601	100	390	0
1934	172137	171744	100	393	0
1935	190716	179980	94	10736	6
1936	247083	229502	93	17581	7
1937	167439	151906	91	15533	9
1938	172474	151611	88	20863	12
1939	218166	191538	88	26628	12
1940	201814	174519	86	27295	14

Source: Quarterly Report of the Trade of Canada,  
1930 - 1940; Newfoundland Fisheries Board.

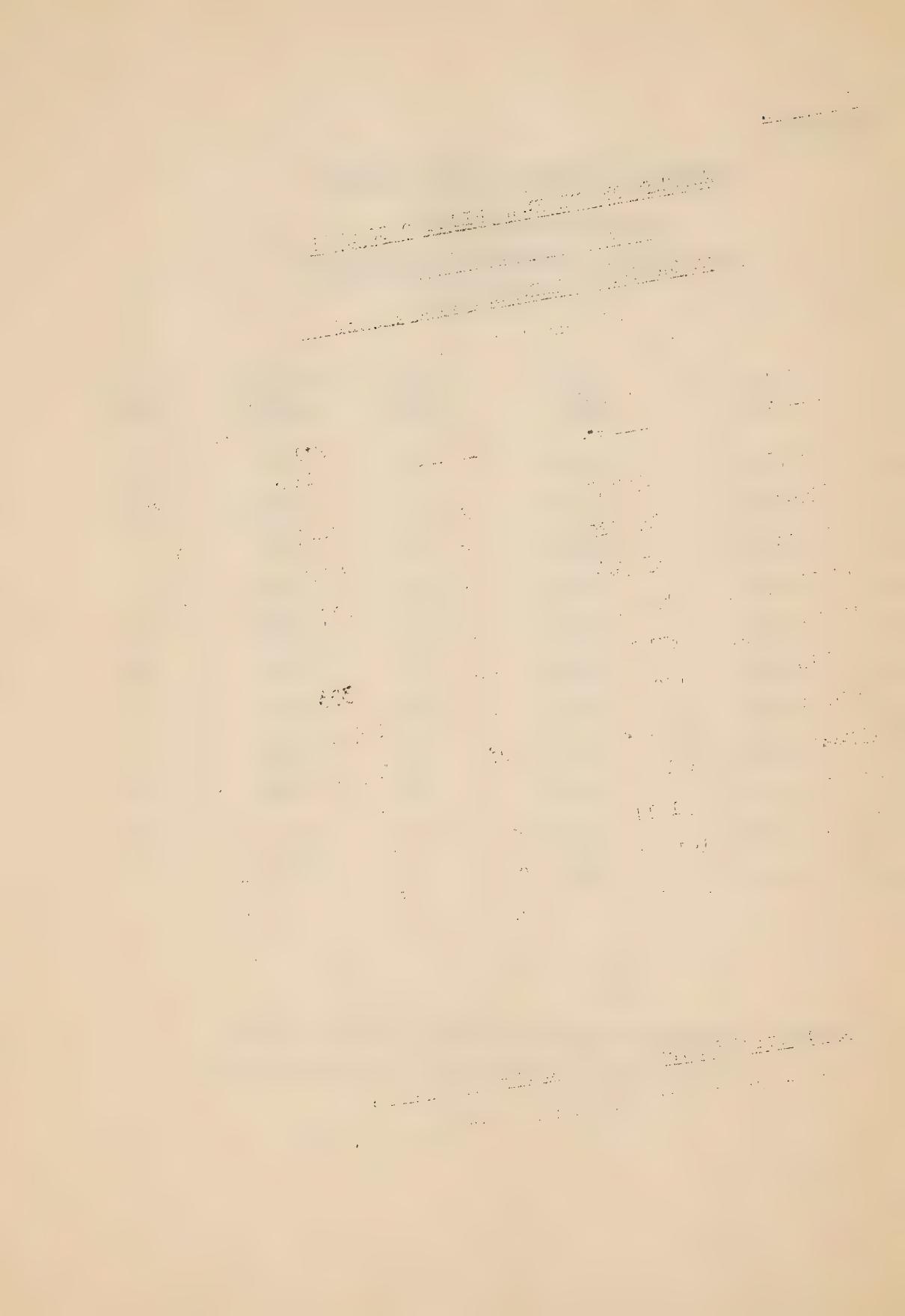


Table No. 7.

TRADE OF NEWFOUNDLAND -----

EXPORTS OF DRIED COD

By countries: SPAIN

<u>year</u>	<u>quantity</u>
	th. cwts.
1927-28	375
1928-29	285
1929-30	321
1930-31	251
1931-32	160
1932-33	212
1933-34	196
1934-35	224
1935-36	214
1936-37	33
1937-38	8

Source: Statistical Abstract for the British Empire, 1938, 1939.



Table No. 8.

TRADE OF NEWFOUNDLAND

EXPORTS OF DRIED COD

By Countries: PORTUGAL

<u>year</u>	<u>quantity</u>
	th. cwts.
1927-28	329
1928-29	241
1929-30	213
1930-31	144
1931-32	156
1932-33	212
1933-34	199
1934-35	166
1935-36	220
1936-37	169
1937-38	95

Source: Statistical Abstract for the British Empire, 1938, 1939.

ОБЩЕСТВЕННО-ПОЛИТИЧЕСКАЯ АКТИВИСТИКА  
СО СЛЕДУЮЩИМИ ИМЕНИЯМИ

БАЛАКОВА НАТАЛЬЯ АЛЕКСАНДРОВНА

БАЛАКОВА

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БАЛАКОВА НАТАЛЬЯ АЛЕКСАНДРОВНА  
БАЛАКОВА НАТАЛЬЯ АЛЕКСАНДРОВНА

Table No. 9.

TRADE OF NEWFOUNDLAND

EXPORTS OF DRIED COD

By countries: · ITALY

<u>year</u>	<u>quantity</u>
	th. cwts.
1927-28	175
1928-29	155
1929-30	139
1930-31	113
1931-32	92
1932-33	124
1933-34	140
1934-35	177
1935-36	43
1936-37	25
1937-38	104

Source: Statistical Abstract for the British Empire, 1938, 1939.



Table No. 10.

TRADE OF NEWFOUNDLAND

EXPORTS OF DRIED COD

By countries: GREECE

<u>year</u>	<u>quantity</u>
	th. cwts.
1927-28	81
1928-29	44
1929-30	55
1930-31	76
1931-32	116
1932-33	31
1933-34	81
1934-35	73
1935-36	86
1936-37	20
1937-38	30

Source: Statistical Abstract for the British Empire, 1938, 1939.



Table No. 11.

TRADE OF NEWFOUNDLAND

EXPORTS OF DRIED COD

By countries: UNITED KINGDOM

<u>year</u>	<u>quantity</u>
	th. cwts.
1927-28	28
1928-29	17
1929-30	26
1930-31	24
1931-32	25
1932-33	28
1933-34	28
1934-35	29
1935-36	24
1936-37	23
1937-38	40

Source: Statistical Abstract for the British Empire, 1938, 1939.

1920-1921 - 1921-1922

1920-1921 - 1921-1922

1920-1921 - 1921-1922

1920-1921 - 1921-1922

1920-1921 - 1921-1922

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1920-1921 - 1921-1922 - 1922-1923

1920-1921 - 1921-1922 - 1922-1923

Table No. 12.

TRADE OF NEWFOUNDLAND  
EXPORTS OF DRIED COD  
By countries: BRAZIL

<u>year</u>	<u>quantity</u>
	Th. cwts.
1927-28	260
1928-29	346
1929-30	289
1930-31	237
1931-32	224
1932-33	246
1933-34	234
1934-35	218
1935-36	216
1936-37	253
1937-38	173

Source: Statistical Abstract for the British Empire, 1938, 1939.

the  $\lambda$  and  $\mu$  which are the eigenvalues of the matrix  $A$ .  
The characteristic equation of  $A$  is given by:

$$\det(A - \lambda I) = 0$$

$$\begin{pmatrix} 2 & 1 & 0 \\ 1 & 2 & 1 \\ 0 & 1 & 2 \end{pmatrix} - \lambda \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} = \begin{pmatrix} 2-\lambda & 1 & 0 \\ 1 & 2-\lambda & 1 \\ 0 & 1 & 2-\lambda \end{pmatrix}$$

$$(2-\lambda)(2-\lambda)(2-\lambda) - (2-\lambda) + 1 = 0$$

$$(2-\lambda)^3 - (2-\lambda) + 1 = 0$$

$$8 - 12\lambda + 9\lambda^2 - \lambda^3 - 2 + \lambda + 1 = 0$$

$$8 - 11\lambda + 9\lambda^2 - \lambda^3 = 0$$

$$(\lambda - 1)(\lambda - 2)^2 = 0$$

$$\lambda_1 = 1, \lambda_2 = 2, \lambda_3 = 2$$

$$\text{The eigenvalues are } \lambda_1 = 1, \lambda_2 = 2, \lambda_3 = 2.$$

$$\text{The corresponding eigenvectors are: } \lambda_1 = 1, \lambda_2 = 2, \lambda_3 = 2.$$

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